

Amendments to the Drawings

Reference character 270 designating a line “PCM” is now labeled with reference character 280. Reference character 272 designating “modem detector” is now labeled with reference character 282.

Attachment: Replacement Sheet
Annotated Marked-Up Drawings

REMARKS

Claims 1-17 are pending in the application.

The Examiner objected to certain informalities in the specification and the drawings. Accordingly, the objections have been addressed.

Claims 1, 2, 4-6, 8-10, 12-15 and 17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho (US6870837) in view of Yamano et al. (US6445731). The rejection is respectfully traversed.

As is well-known in the art of modem relays, in order to maintain a modem connection that is, keep the modem connection alive, modem data must be continuously transmitted between the modems regardless of the amount of actual user data traffic being generated. This results in idle data being transmitted over an IP network which consumes IP network bandwidth.

Applicants' invention is directed to method and apparatus for reducing Internet bandwidth for a modem relay by not forwarding data packets that would have a payload of idle data over the IP packet network between Internet nodes while maintaining the connection between the modems.

An embodiment of Applicants' invention is described in connection with FIG. 2 of the application as originally filed:

The deframer module 234 includes an idle detect module 274. The framer module 232 includes an idle generate module 272. The idle detect module 274 detects idle data in the PCM stream. Idle data can be 'FF' or '7E' dependent on the negotiated error correction protocol. The idle data received by the deframer 234 is not forwarded over the VoIP connection. Instead, the deframer 234 drops the idle data.

The framer 232 detects an idle period when no RTP packets are being received. In order to maintain the modem connection (keep the modem connection alive), the idle generate module 272 in the framer 232 generates 'idle flags' to be transmitted over the PCM connection.

(See page 8, line 28 to page 9, line 7)

In accordance with the invention, a first modem is coupled to one Internet node and a second modem is coupled to another Internet node. Upon detecting no data packets received from the other Internet node to transmit to the first modem, the Internet node regenerates (e.g., idle generate module 272; FIG. 2) the idle data that would have been received in the payload of the non-received data packets to transmit to the first modem. The regenerated idle data is used to

maintain the connection between the first modem and the second modem. Upon detecting idle data received from the first modem to forward to the other Internet node (e.g., idle detect module 274; FIG. 2), the Internet node drops the detected idle data, that is, data packets that would have a payload of “idle data” are not transmitted over the packet network.

The Ho reference is directed to data transfer over an IP network. Instead of storing the received idle data in the payload of the data packet, a circuit header in each IP packet includes an idle flag that is set in the packet to indicate idle data was received. Thus, the receiver receives a packet that includes an indication of the idle data instead of the actual idle data. [column 6, lines 58-65]

The Yamano reference discloses aspects of a conventional modem in the background section [column 1, lines 33-55] that relate to generating idle information in the form of nulls or a marking tone when no packets are available to a framer that is responsible for composing a continuous bit stream from packets received from a packet queue.

To establish a prima facie case for obviousness under 35 U.S.C. § 103(a), the references when combined must teach or suggest all the claim limitations. For the reasons discussed below, it is respectfully submitted that the Examiner has not established a prima facie case under 35 U.S.C. § 103(a) for the rejected claims.

The Examiner characterizes the transmitting of an indication of idle data in a packet instead of transmitting the idle data in the payload of a packet in the Ho reference as teaching the recited limitation of claim 1 “dropping the detected idle data by not forwarding the data packet over the IP network.” However, such transmission of an indication of idle data instead of the actual idle data in the Ho system is nevertheless still transmitted in a data packet over the IP network. Thus, the recited limitation of claim 1 is not met by the Ho reference.

Turning to Yamano, the Examiner indicates the view that it teaches the recited limitation of claim 1 “upon detecting no data packets received from the other Internet node over an IP network to transmit to the first modem, regenerating idle data at the Internet node to transmit to the first modem, the regenerated idle data used to maintain a connection between the first modem and the second modem.” However, there is no teaching or suggestion that the conventional modem described in Yamano 1) detects no data packets are received from another Internet node and 2) regenerates idle data to maintain a connection between modems. Rather, the referenced

discussion in the background of Yamano is merely concerned with “composing a continuous bit stream which is synchronous with respect to the modem bit clock.” [column 1, lines 46-50].

Thus, the recited limitation of claim 1 is not met by Yamano.

From the foregoing, it is clear that the combination of Ho and Yamano does not teach or suggest Applicants’ claimed invention. The combination at best is a modem system with a packet network over which data packets are transmitted with an indication of idle data instead of the idle data.

The foregoing arguments apply to Claims 5, 9 and 13, which recite similar limitations. Claims 2, 4-6, 8, 10, 12, 14-15 and 17 depend from respective base claims 1, 5, 9 and 13 and are allowable for the same reasons. Accordingly, the present invention of claims 1, 2, 4-6, 8-10, 12-15 and 17 is believed to be patentably non-obvious over the cited art. In view of the foregoing, removal of the rejection under 35 U.S.C. § 103(a) and acceptance of claims 1, 2, 4-6, 8-10, 12-15 and 17 are respectfully requested.

Claims 3, 7 and 11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho in view of Yamano and further in view of Cidon et al. (US5343473). Claim 16 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ho in view of Yamano and further in view of Byers (US5959996). Claims 3, 7, 11 and 16 depend from respective base claims 1, 5, 9 and 13. Claims 3, 7, 11 and 16 are patentable for the reasons noted above with respect to claim 1.

Reconsideration of the rejections under § 103 is respectfully requested.

In view of the foregoing, removal of the rejections under 35 U.S.C. § 103(a) and acceptance of Claims 1-17 are respectfully requested.

Information Disclosure Statement

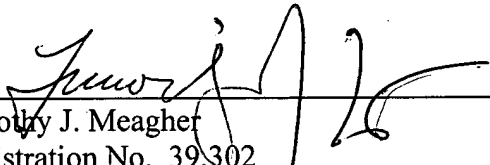
A Supplemental Information Disclosure Statement (IDS) is being filed concurrently herewith. Entry of the IDS is respectfully requested.

CONCLUSION

In view of the above remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 
Timothy J. Meagher
Registration No. 39,302
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 5/31/6



200

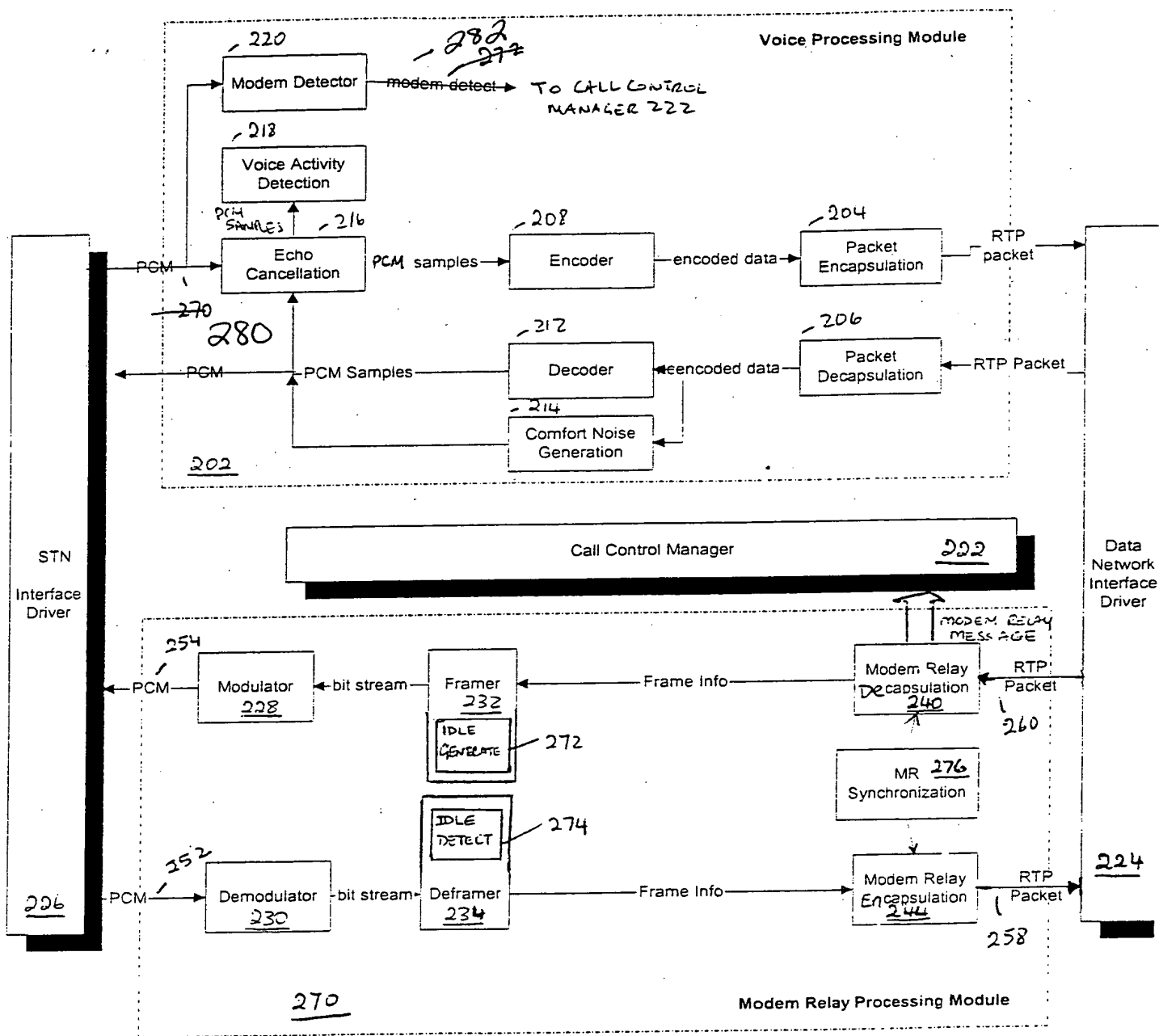


Figure 2

BEST AVAILABLE COPY